

Case Report

Diagnosis and management of Crohn's disease in retarded child

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ABSTRACT

Background: Crohn's disease is an uncommon condition characterized by granulomatous lesions. It is a rare disease and affects mainly in the terminal ileum. It may also manifest in the oral cavity as an unhealed, painful chronic aphthous-like ulcer and may be undiagnosed, so that it leads to the mismanagement of the disease. **Purpose:** To overview the establishment and management of a retarded child with chronic painful ulcers and gastrointestinal problems. **Case:** An 11-year-old retarded child who complained of ulcers since 6 months ago on the both side of the cheek and the lateral border of the tongue. Large irregular lesions were found accompanied by lips swelling, gingival hyperplasia, mucosal tags, hypersalivation. The blood test showed that the patient was suffering from anemia and haematinic (Fe, Folat and vitamin B12) deficiencies. Weight loss occurred for last 6 months, abdominal pain and constipation were also identified. Daily food pattern showed imbalance food intake. Histopathology features showed granulomatous lesions and was confirmed as a Crohn's disease. **Case management:** Reassurance and team work with gastroenterologist were performed. Systemic sulfasalazin combined with corticosteroid and multivitamin were administered. Oral hygiene was maintained with hyaluronic acid mouthwash. Reduced in size of ulcer, pain and swelling were shown gradually. Oral ulcers and gastrointestinal symptoms disappeared after 2 months treatment. **Conclusion:** Diagnosis of Crohn's disease needs a comprehensive clinical examination and histopathological test are mandatory to be able to manage the disease thoroughly.

Key words: Crohn's disease, diagnosis, management, child

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INTRODUCTION

Crohn's disease is a chronic inflammatory condition which may affect any part of the whole gastrointestinal tract, from mouth to anus.¹ Most commonly, it affects the terminal ileum and the colon. Crohn's disease is rare and may influence oral health because it causes malabsorption and vitamin deficiencies which predispose to oral lesions.

Crohn's disease occurs throughout the world, but primarily in western developed population. The annual incidence and prevalence of Crohn's disease has been steadily rising not only in United States and Northern Europe, but lately also increases in Asian countries such as China, Japan and Thailand.²

It affects mainly from young childhood to advanced age, but the peak ages are second and third decades.² Previously, epidemiology studies showed that both sexes can be affected equally,¹ however currently females are affected slightly more than males.²

Crohn's disease is part of inflammatory bowel disease which is characterized by granulomatous lesions.¹⁻³ The etiology is still unknown, with very little pathognomonic feature of the disease. The diagnosis may be delayed for months or even years.⁴ Crohn's disease appears as to be heterogeneous group of disorders probably caused by commensal bacteria in person with a genetically determined dysregulation of mucosal T-lymphocytes, the inflammatory response being mediated by various factors such as tumour necrosis alpha. Susceptibility appears to be related to a locus

on chromosome 16. The microorganism incriminated is *Mycobacterium paratuberculosis*, but it appears unlikely that this is of major importance.⁵

The manifestations of Crohn's disease depend on its severity and the affected site. General symptoms are produced from gastrointestinal problem such as abdominal pain, diarrhea, constipation, anemia and weight loss.^{3,6} This comes from the inflammation process in the bowel which causes swelling, redness and ulceration. The disease process may also involve the orofacial tissues. The mucosa may have areas of serpiginous ulceration with adjacent oedematous, hyperplastic mucosa, creating a "cobblestoned" appearance. The ulcer may be superficial and shallow or deep and fissuring.^{1,2} Other orofacial features concurrently found are facial/lips swelling, angular stomatitis/cracked lips, aphthous-like ulcers, gingival hyperplasia and mucosal tag appearance.²

Granulomas may also be seen in other conditions, especially sarcoidosis and in relation to foreign bodies. The term orofacial granulomatosis has been introduced for oral granulomatous reactions which are unassociated with any detectable systemic disease or with foreign bodies. In some patients the granulomatous reaction appears to be due to common additives to food and drink such as benzoates, cinnamon, or tartrazine. In some patients develop the condition after drinking carbonated drinks.³

The diagnosis of Crohn's disease depends on the demonstration of typical clinical, radiology, or histopathologic findings.^{3,6} The similar general symptoms of Crohn's disease and ulcerative colitis produce difficulty in making straight diagnosis, so that it needs the diagnostic histopathology.⁴ However, the findings of orofacial granulomatosis in these patients will be very useful, and the non-caseating granuloma from oral lesion biopsy is highly suggestive (65–85%) of Crohn's disease.⁷ This article reported a case of Crohn's disease in retarded child, which one of the manifestation was orofacial granulomatosis. The diagnostic approach to and the treatment are also reviewed.

CASE

An 11-year-old retarded child was referred from pediatrician (asthma and allergy clinic) in Jakarta of having persistent, painful ulcers on both side of the cheek and lateral border of the tongue since 6 months ago. The patient suffered from frequent diarrhea, constipation, weight loss and has been treated with medications with minimal improvement. There was no history of asthma, allergy and tuberculosis (to exclude sarcoidosis) reported. Patient and also family member admitted of daily food pattern/food intake imbalance of patients. The extra oral examination revealed lymphadenopathy on both submandibular nodes. The lower lip was markedly edematous (Figure 1). The lip was firm to palpation. Intraoral examination of the right buccal mucosa revealed a wide, deep and yellowish ulcer, with irregular margins, slightly indurated (Figure 2). On

the left buccal mucosa revealed mucosal tag and similar ulcer, but slightly smaller than the right side (Figure 3). On the left lateral of the tongue was found an irregular yellowish ulcer, as well as depapilated areas on the dorsal and extended to ventral of the tongue, as it showed healed ulcers (Figure 4 and 5). Both buccal mucosa were fibrous, caused limitation of mouth opening. Hypersalivation and halitosis were noticed.



Figure 1. Lip swelling was shown on the first visit.



Figure 2. Wide, fissured, irregular yellowish ulcers with soft-tissue swelling on the right buccal mucosa (first visit).

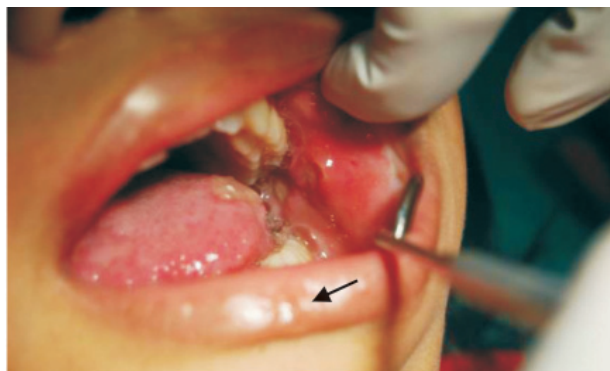


Figure 3. Irregular yellowish ulcers with mucosal tag (arrow) on the left mucosa (first visit).



Figure 4. Irregular ulcers on the lateral border and dorsal of the tongue were also shown on the first visit.



Figure 5. Irregular ulcers extended to ventral of the tongue (first visit).

There were no appreciable changes on the palatum and hyperplasia gingival were slightly noticed although prominent. The provisional diagnosis based on clinical manifestations was established as Crohn's disease. Differential diagnosis included sarcoidosis and orofacial granulomatosis with background of allergic reaction was necessary to be ruled out.

CASE MANAGEMENT

Under consent (represented by family member, as the patient was a retarded child), treatment planning was made. Chest radiography and a series of full blood tests (including level of vitamin B12, ferrum and folic acid) were requested to rule out anemia and deficiencies. Referral letter to gastroenterologist was made to obtain optimum management for patients. On the first visit, biopsy was not performed as patient needed to be handled psychologically. Biopsy was planned to be done after laboratory results and gastroenterologist opinion. A mouth wash contain of hyaluronic acid was prescribed to relieve ulcer pain. Gastroenterologist recommended patient to do gastrointestinal tract endoscopy, and patch test to rule out allergic reaction. However, patient refused to do the endoscopy.

Second visit, laboratory findings showed patient was suffering from anemia, followed by deficiency of a haematinic (Fe, folat, and vitamin B12) which mean malabsorption as the effect of Crohn's disease. To confirm the diagnosis, punch biopsy was done on the right buccal ulcer with sutures and was sent for histopathological evaluation. Patient was instructed to continue the gargle and clobetasol propionate 0.5% was applied topically three times daily for 2 weeks.

Third visit, the histopathology result showed some *non-caseating* epitheloid granulomatous with infiltration of perivascular lymphocyte and no malignant cells detected. The patch test was also negative. Therefore, a final diagnosis of Crohn's disease was made.

Fourth visit, under coordination with gastroenterologist, systemic sulfasalazine 40 mg/kg body weight/day, 4 times daily for 2 weeks, corticosteroid therapy (dexamethasone 45 mg per day, 3 times daily, tapered dose for 2 week days) and multi vitamin were started and were well tolerated. The lip swelling decreased, and there was an obvious reduction in the ulcer size and pain. Treatment was maintained until next 3 visits. The ulcers were gradually healed and disappeared eventually (Figure 6, 7, 8), except the fibrosis of mucosa and cobblestoning, as the effect of disease (Figure 9, 10, 11). Patients were instructed to routine 6 months checked up to maintain oral hygiene and consume a proper nutrition.



Figure 6. Ulcers on the right buccal mucosa showed healing (fourth visit).



Figure 7. Left buccal ulcer showed gradually healing (fourth visit).



Figure 8. Ulcers on the dorsal of the tongue healed gradually.

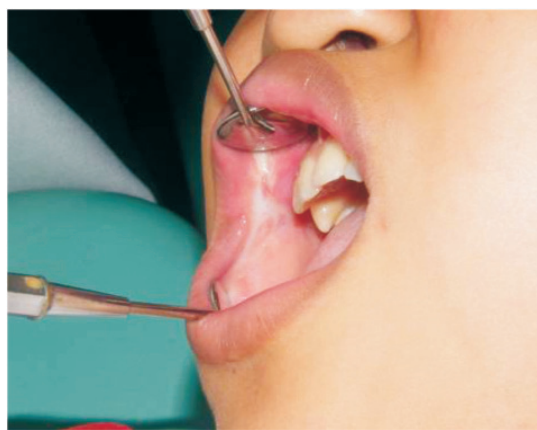


Figure 9. After 2 months of treatment, chronic ulcers on the right buccal mucosa have disappeared, and left a cobblestoned and mucosal fissures (mucosal tags).



Figure 10. Healed ulcers (left buccal mucosa).



Figure 11. Complete healing of ulcers on dorsum of the tongue.

DISCUSSION

The diagnosis of Crohn's disease depends on the demonstration of typical clinical, radiology and histopathologic findings.³ Differential diagnosis of lip swelling and ulcers which is called aphthous-like ulcers in this patient includes sarcoidosis, ulcerative colitis, orofacial granulomatosis (OFG), Meischer's cheilitis, and Melkerson-Rosenthal syndrome.⁶

All of these conditions must be taken into account during investigation/anamnesis. The medical history and the results of the clinical examination showed that this patient had gastrointestinal problems, no history of tuberculosis, asthma, and demonstrated typical common oral lesions (cobbletoning and mucosal tag). It excluded the possibility of sarcoidosis (which usually present with background of tuberculosis). Besides that it also ruled out OFG, which is presenting a swelling and ulcers without any gastrointestinal symptoms. Meischer's cheilitis is a condition where the swelling of the lips is isolated, without ulcers in the oral cavity.³ Melkerson-Rosenthal syndrome

shows a lip and facial swelling in combination with fissured tongue and facial palsy.³ That clinical appearance was not found in this patient. Ulcerative colitis was excluded by histological findings that found non-caseating granulomas from oral lesion biopsy.

Establishing the diagnosis of Crohn's disease in this patient followed the guideline of diagnosis of Crohn's disease in children and adults which has been published in 2007.⁸ It stated that Crohn's disease was established if the patient fulfills at least 2 of these criteria: a) clinical history shows abdominal pain, weight loss, fatigue; b) endoscopic findings: cobblestoning, linear ulceration, skip areas, perianal disease; c) radiological findings: fistula, mucosal cobblestoning, or ulceration; 4) macroscopic appearance: patchy penetrating lesions, cobblestoning, discrete ulcerations, fissuring, strictures); 5) histological finding of transmural inflammation or granulomas. Hence, based on those criteria, this patient has fulfilled the criteria of Crohn's disease. In addition, ancillary test (complete blood count) has performed. It comprised of erythrocyte level, serum levels of folic acid, iron and vitamin B12

for Crohn's disease to assess whether a systemic disease was responsible for the granulomatous inflammation. The assessment was essential, especially in the presence of signs of anemia and intestinal malabsorption, as one of the major effects of Crohn's disease, where it is caused by the damaged villi of ileum.^{1,2}

Oral lesions present vary 6-11%.⁴ In this case, the major ulcers present as cobblestoning appearance of oral mucosa and aphthous-like ulcer, as most commonly reported.⁷ According to several authors^{9,10} a linear ulceration in the buccal vestibule surrounded by hyperplastic mucous folds is highly suggestive of Crohn's disease, however in this case, linear ulcer was not present. Research on children who suffered Crohn's disease found that labial swelling and mucosal tags were the most frequent findings and majority of the children may have more than one type of oral mucosa.⁴ It is similar with the clinical appearance of this patient.

Analysis on 79 cases of Crohn's patient indicated that granulomas formation was more presented on oral lesions (67-85%) biopsy than on intestinal lesions (50%).¹¹ Biopsy on intestinal was not carried out as the patient refused to do that. However, finding of non-caseating granulomas from the oral biopsy was adequate enough to establish the diagnosis, based on previous study above.

In this case, diagnosis of Crohn's disease was slightly difficult as patient was a retarded child, so that the information of gastrointestinal symptoms was firstly inadequate. In addition, patient also refused to undergo endoscope evaluation. Patient was handled patiently and involved teamwork (with gastroenterologist and family member). Patient refused to apply topical ointment (clobetasol propionate). It was due to the limitation of mouth opening because of the mucosal thickening, and rigidity of buccal mucosa. It was also because of hypersalivation that disturbed the attachment of ointment to oral lesions. Hence, the treatment was changed into systemic corticosteroid and sulfasalazine as a corticosteroid-sparing agent to reduce systemic side effect.¹² The steroid was used in managing acute phases of the disease. Sulfasalazine was used mainly for maintenance between active episodes⁶ and was given under cooperation with patient's gastroenterologist. Other therapeutic measures have been reported in the literature, including hydroxychloroquine, methotrexate, clofazimine, metronidazole, minocycline alone or in combination with oral prednisone, thalidomide and dapsone.¹³⁻¹⁵ Oral hygiene maintenance was improved by dental health education every visit and using mouthwash. Ulcers in the mouth and symptoms of gastrointestinal improved gradually. It helped patient a lot in taking food, so that the haematitic deficiency was corrected automatically.

Crohn's disease is a rare disease with major oral manifestations of chronic aphthous-like ulcer. In this case, Crohn's disease was established on retarded child, based

on medical history, clinical appearance (general and oral manifestations), histological findings and laboratory assessment. The establishment of diagnosis of Crohn's disease can not be based on single manifestation. Besides typical oral lesions, granulomas formations are the major essential hints to distinguish other similar gastrointestinal diseases and orofacial granulomatosis. Due to a lack of understanding of etiology, relapses are common, and long-term treatment may be required. Therefore, a comprehensive clinical evaluation and histopathological test are mandatory to diagnose and manage Crohn's disease.

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